FIG. 1

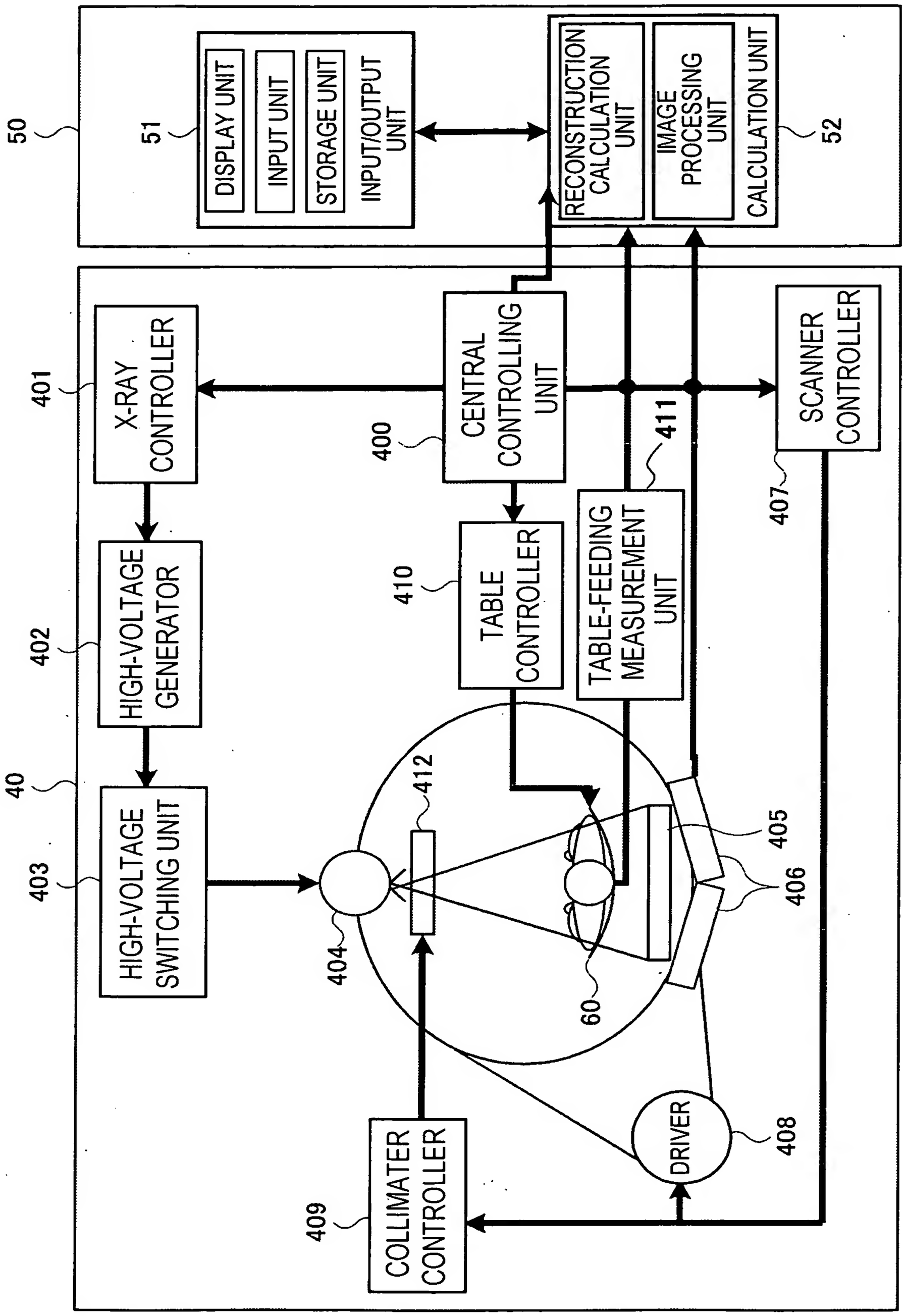
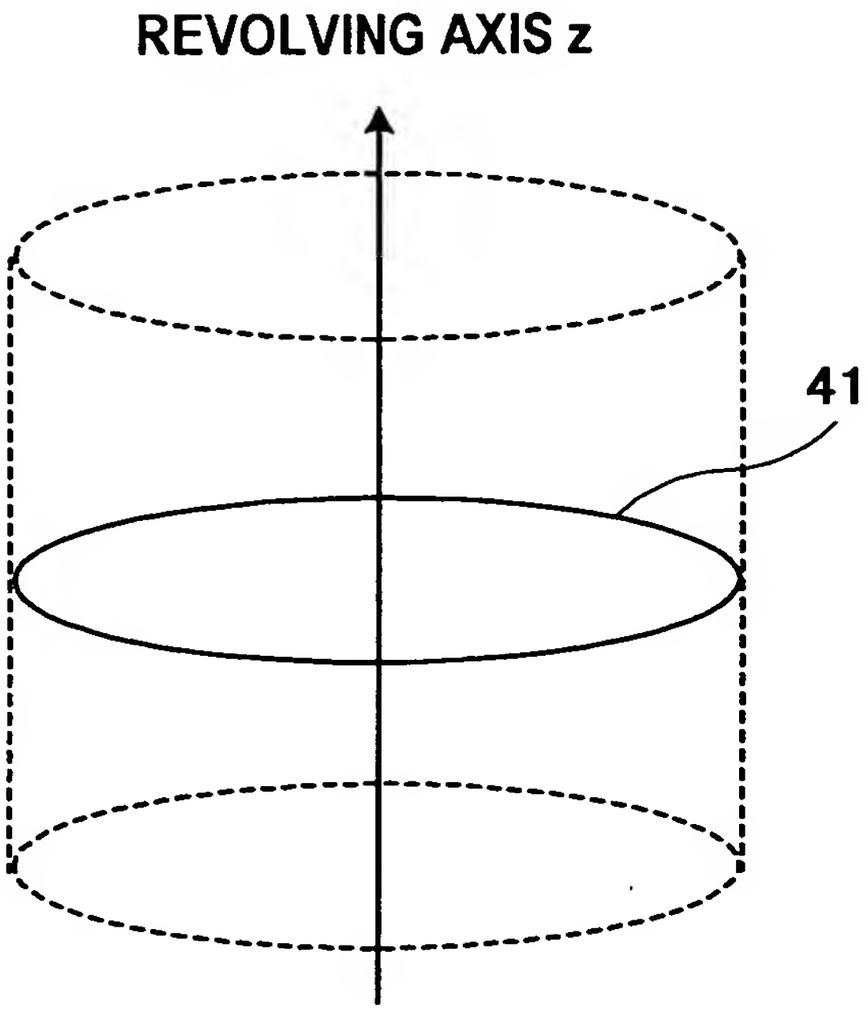

50
51
DISPLAY UNIT
INPUT UNIT
STORAGE UNIT
INPUT/OUTPUT UNIT
RECONSTRUCTION CALCULATION UNIT
IMAGE PROCESSING UNIT
CALCULATION UNIT
52
401
X-RAY CONTROLLER
400
CENTRAL CONTROLLING UNIT
411
SCANNER CONTROLLER
407
402
HIGH-VOLTAGE GENERATOR
410
TABLE CONTROLLER
TABLE-FEEDING MEASUREMENT UNIT
40
403
HIGH-VOLTAGE SWITCHING UNIT
412
405
406
404
60
409
COLLIMATER CONTROLLER
DRIVER
408

FIG. 2

(a)


REVOLVING AXIS z
41

(b)

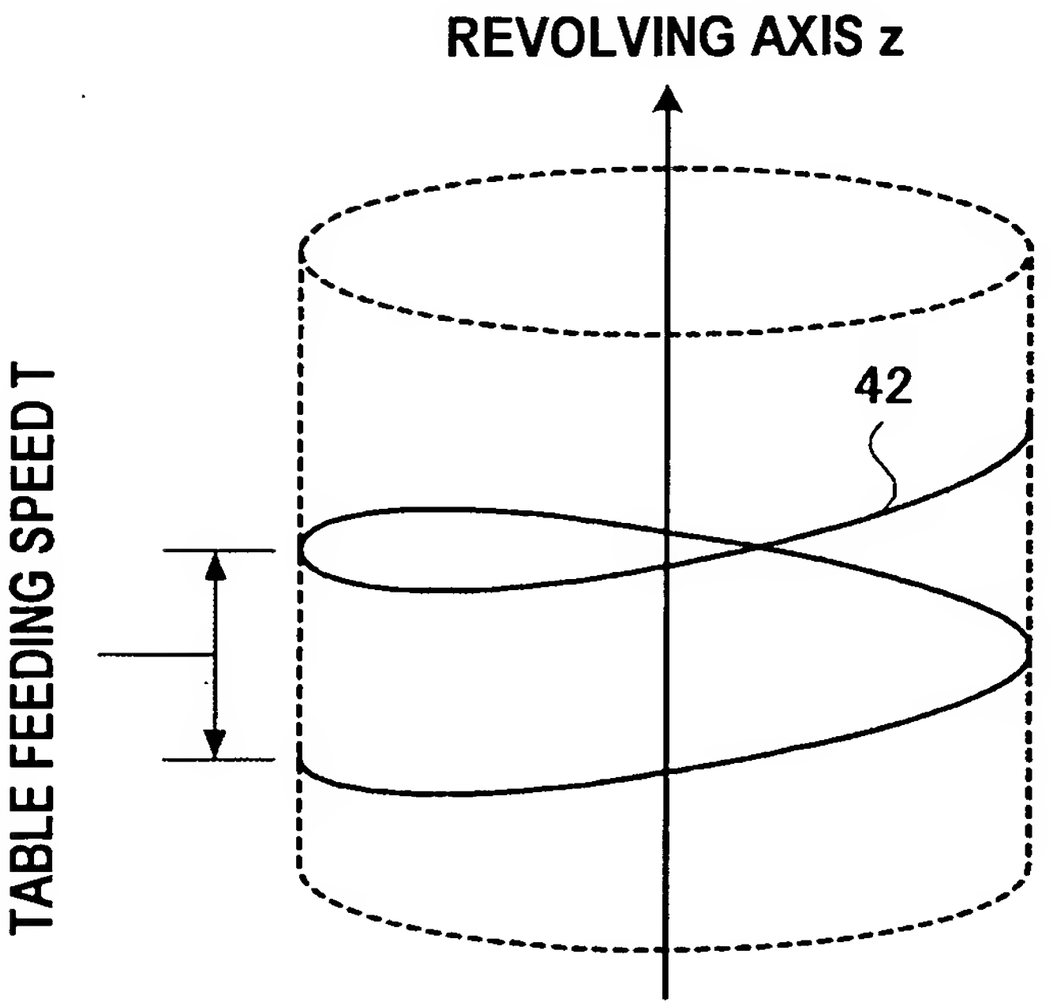
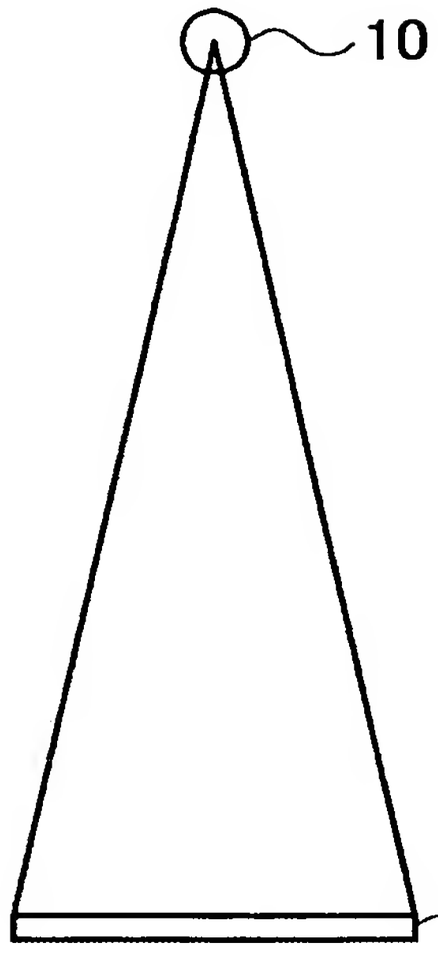

REVOLVING AXIS z
TABLE FEEDING SPEED T
42

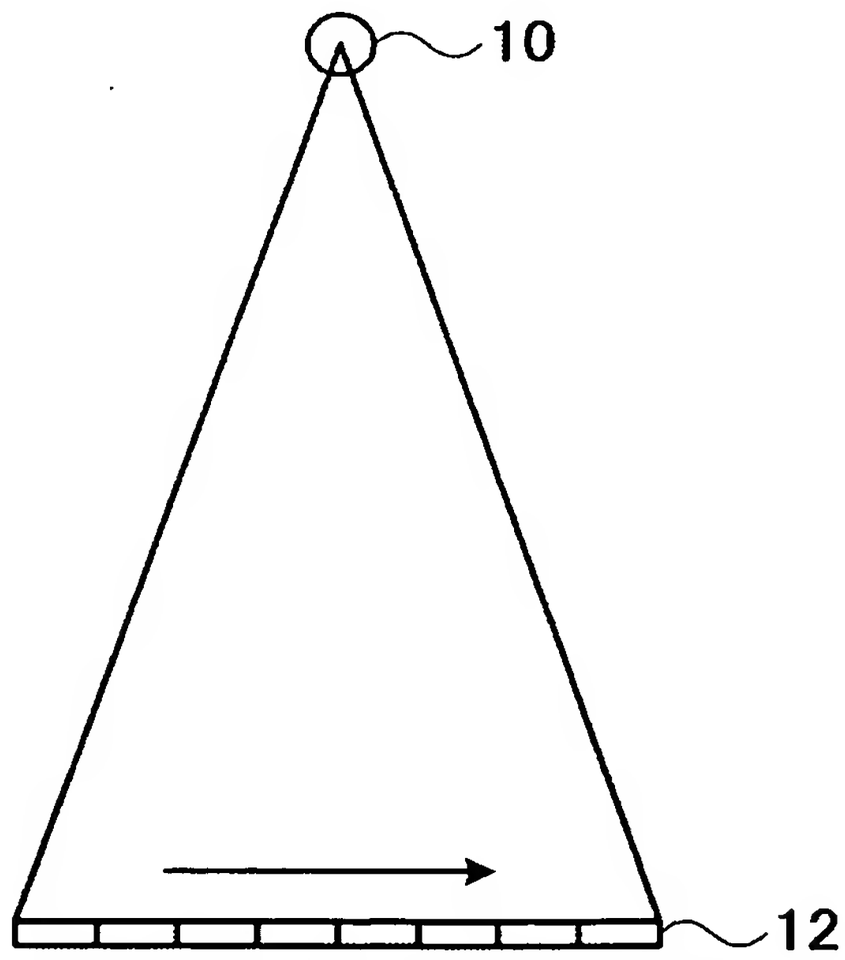
FIG. 3

(a)



SINGLE-ARRAY DETECTOR TYPE CT

(b)



MULTI-ARRAY DETECTOR TYPE CT

FIG. 4

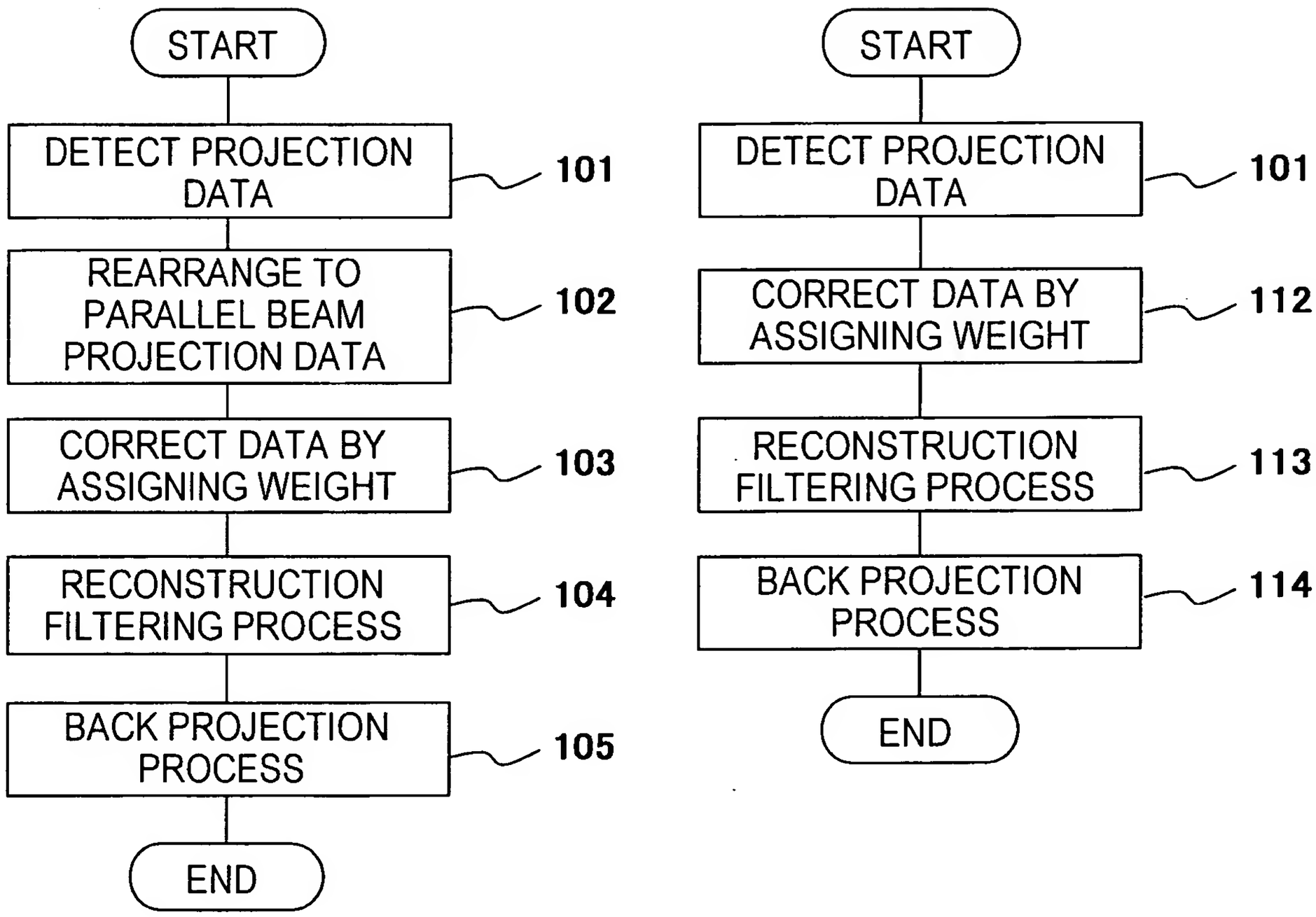
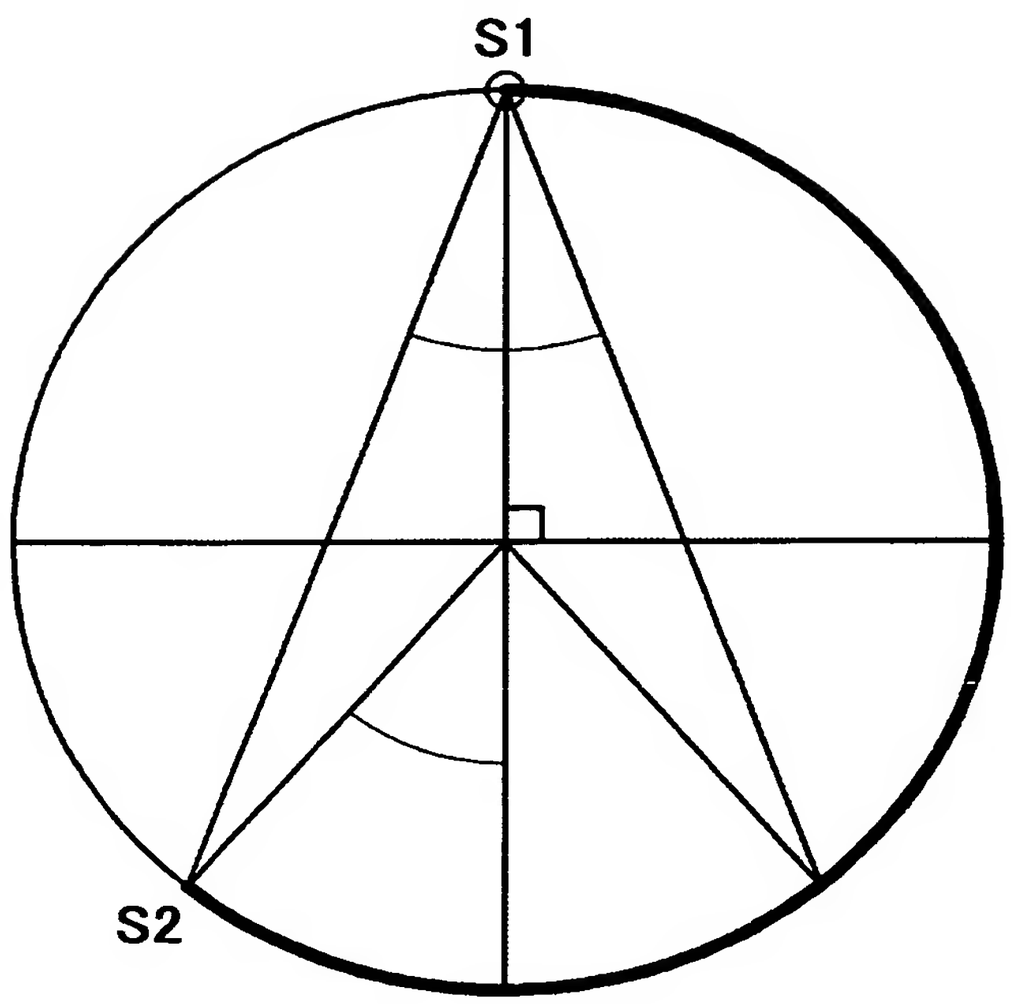

(a)
START
DETECT PROJECTION DATA
101
REARRANGE TO PARALLEL BEAM PROJECTION DATA
102
CORRECT DATA BY ASSIGNING WEIGHT
103
RECONSTRUCTION FILTERING PROCESS
104
BACK PROJECTION PROCESS
105
END
(b)
START
DETECT PROJECTION DATA
101
CORRECT DATA BY ASSIGNING WEIGHT
112
RECONSTRUCTION FILTERING PROCESS
113
BACK PROJECTION PROCESS
114
END

FIG. 5

(a)



(b)

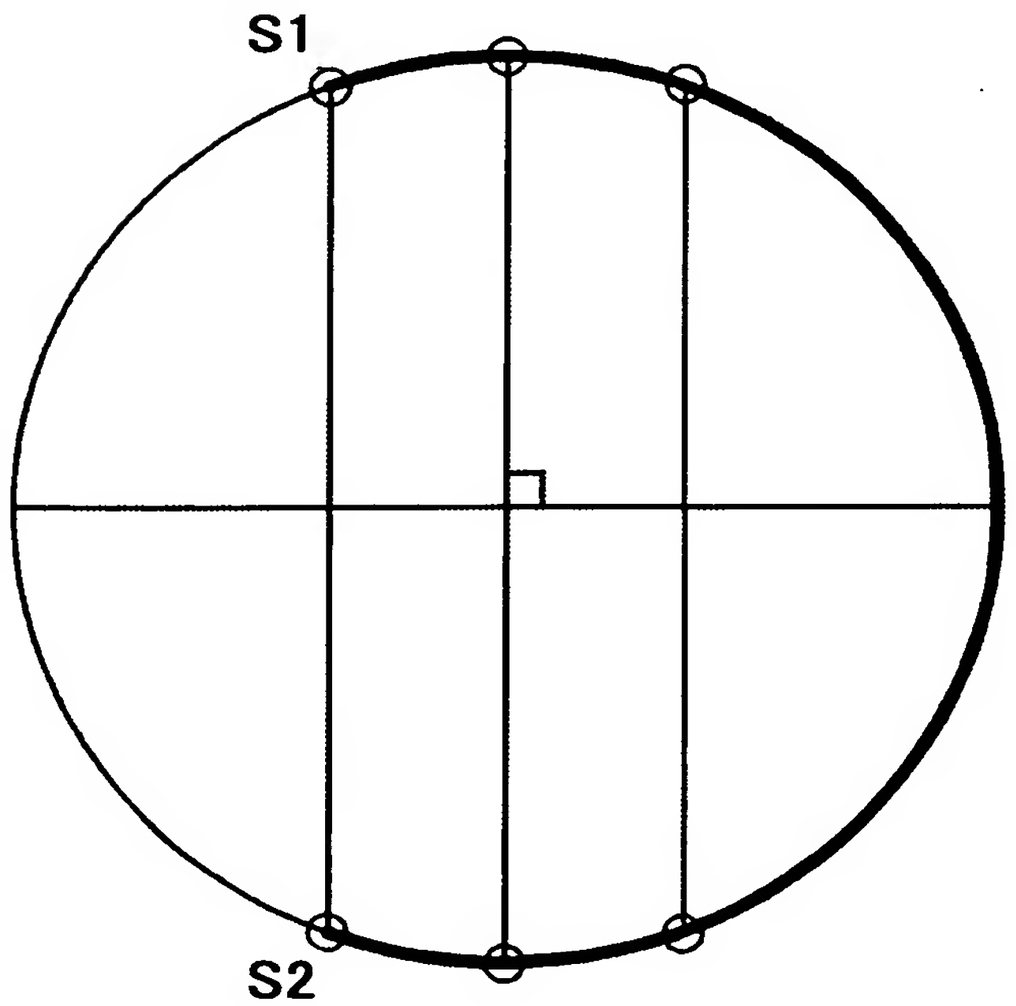


FIG. 6

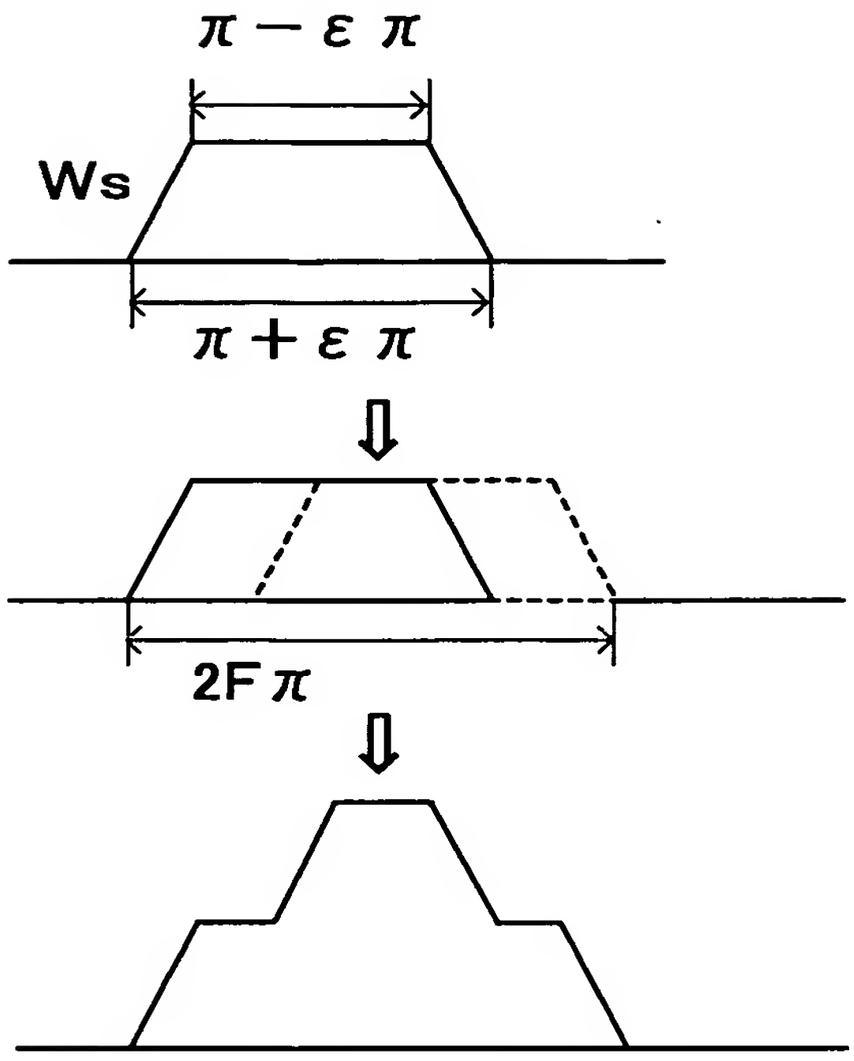
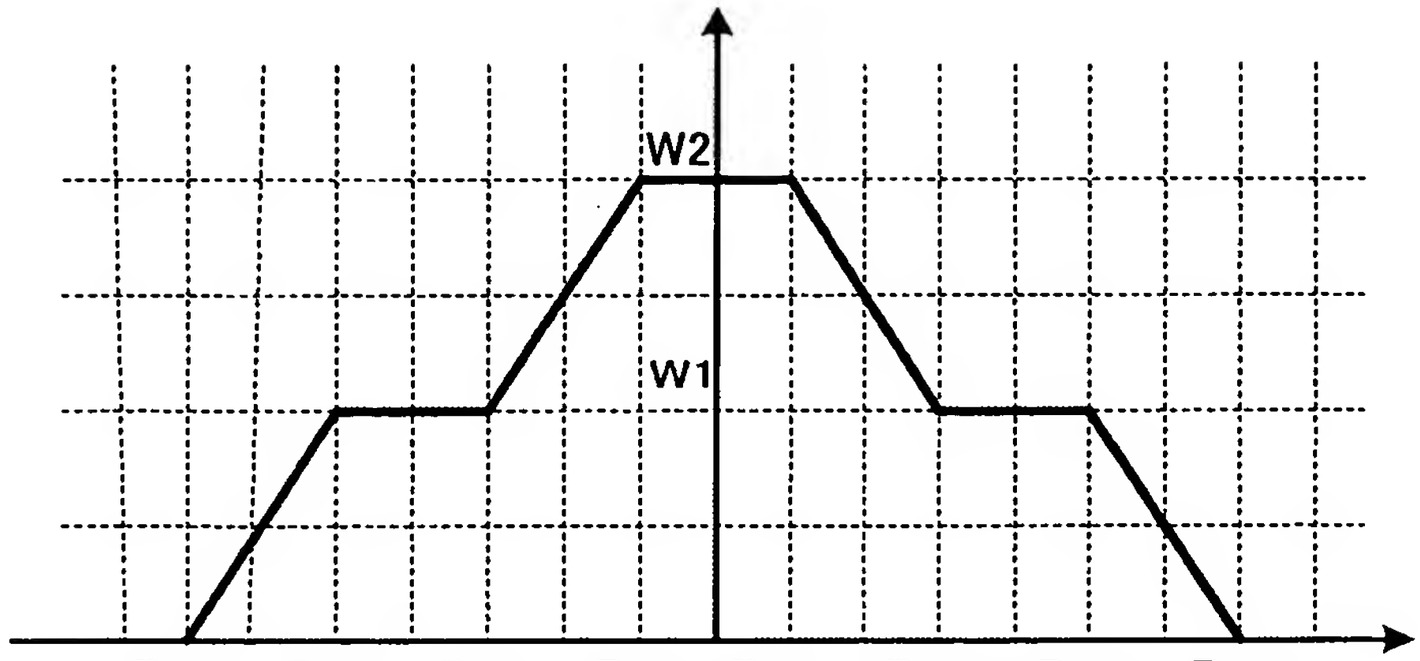


FIG. 7

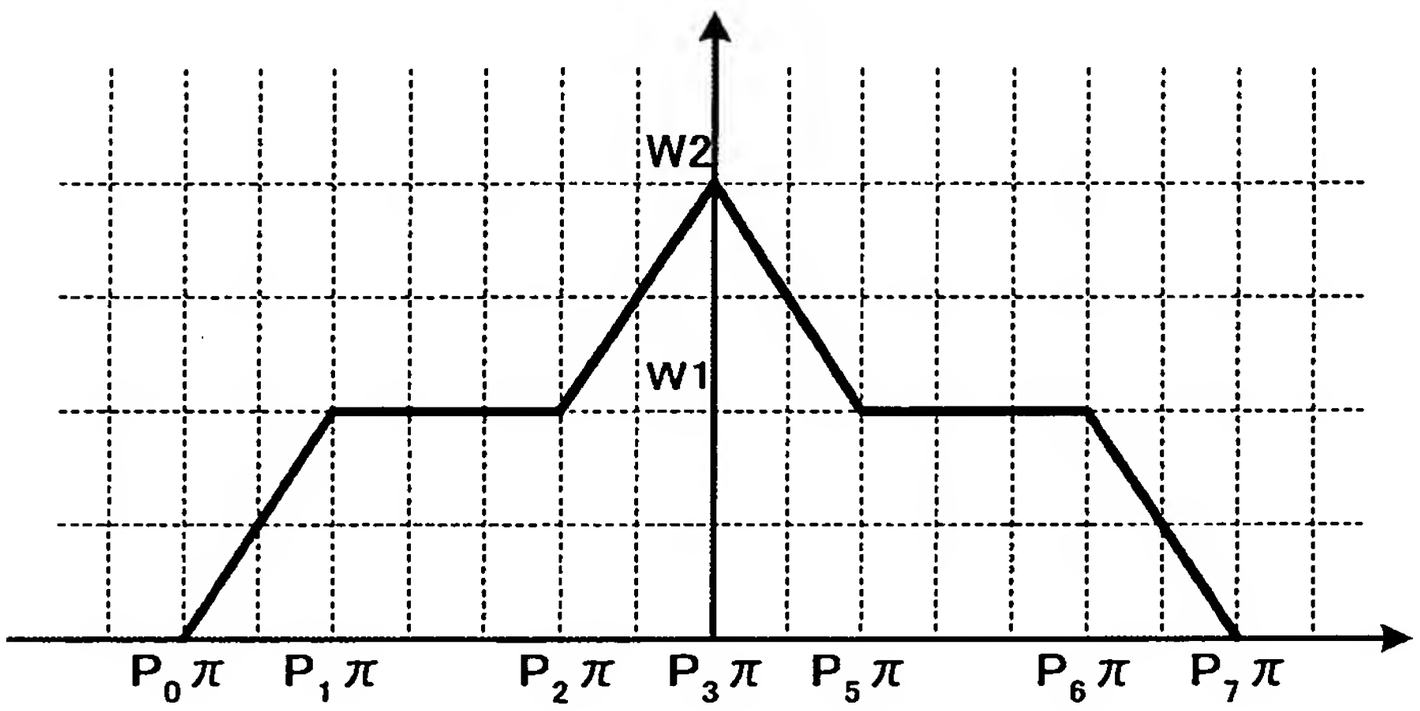
(a)

ε =0.2
F=0.9



(b)

ε =0.2
F=1.0



(c)

ε =0.2
F=1.1

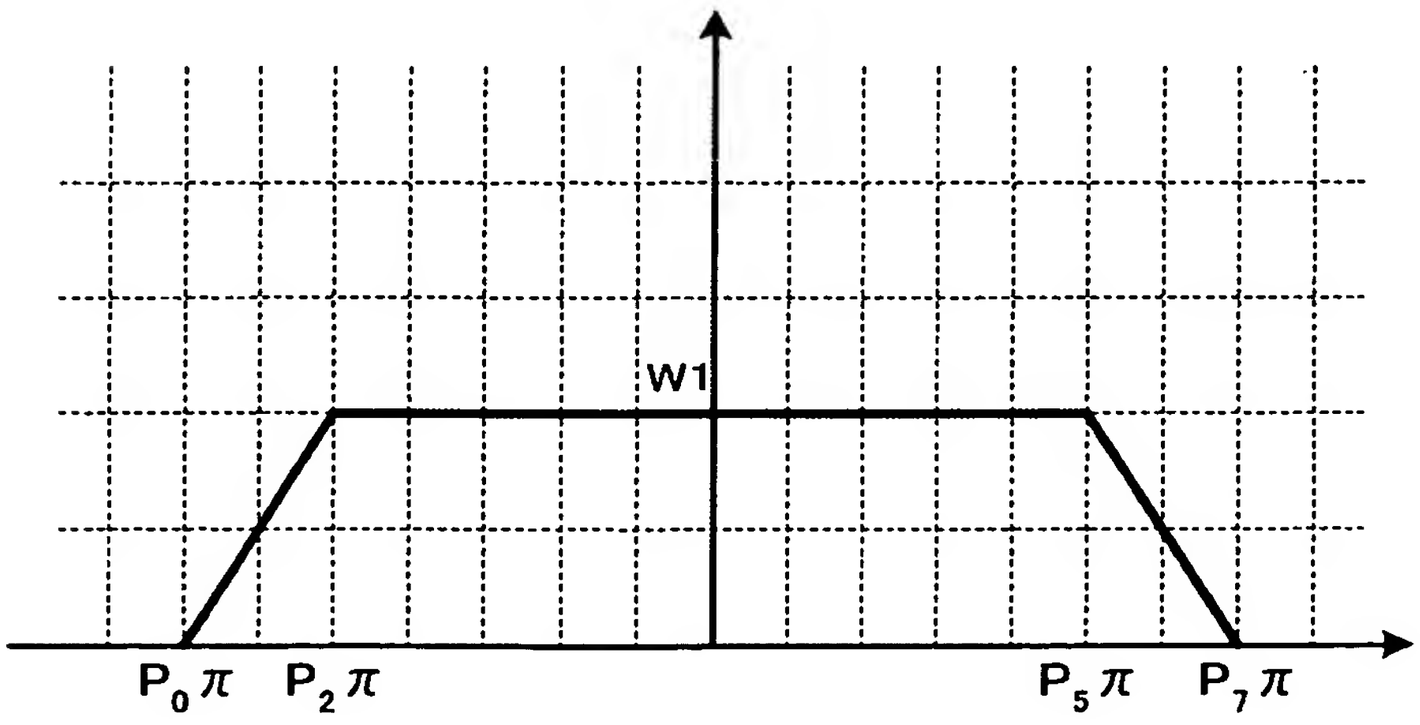
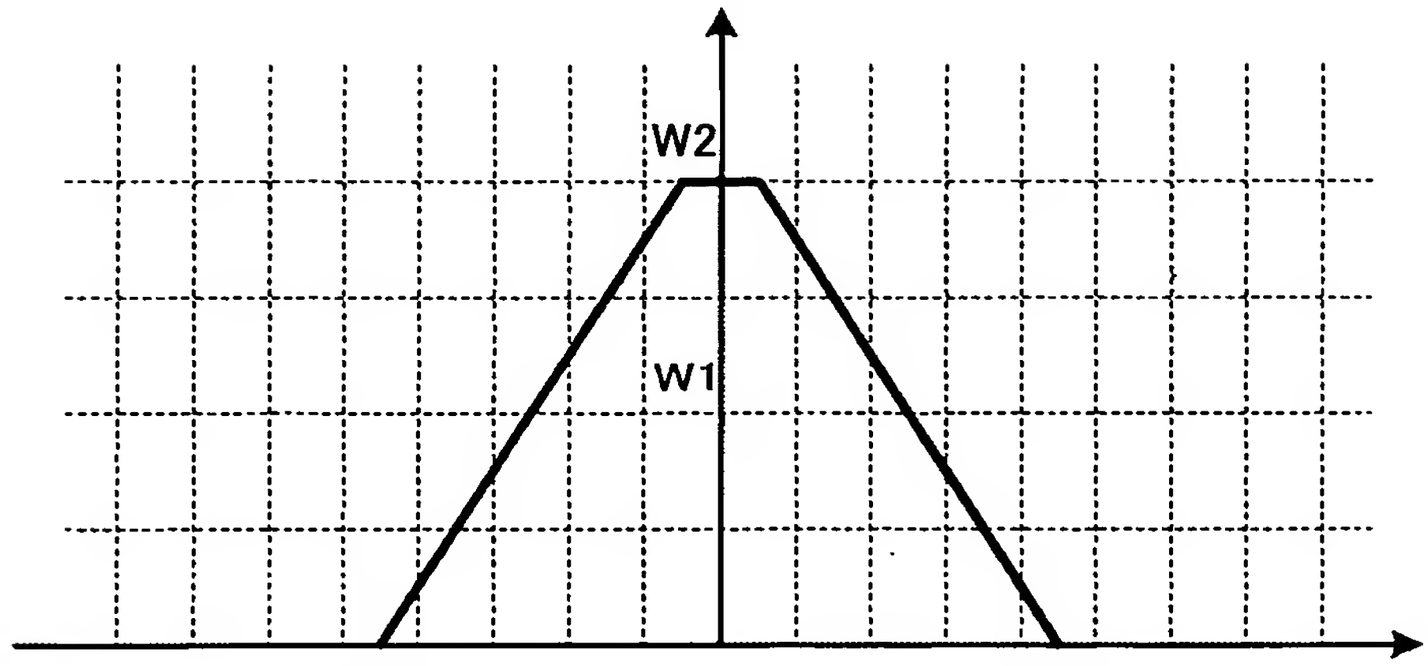


FIG. 8

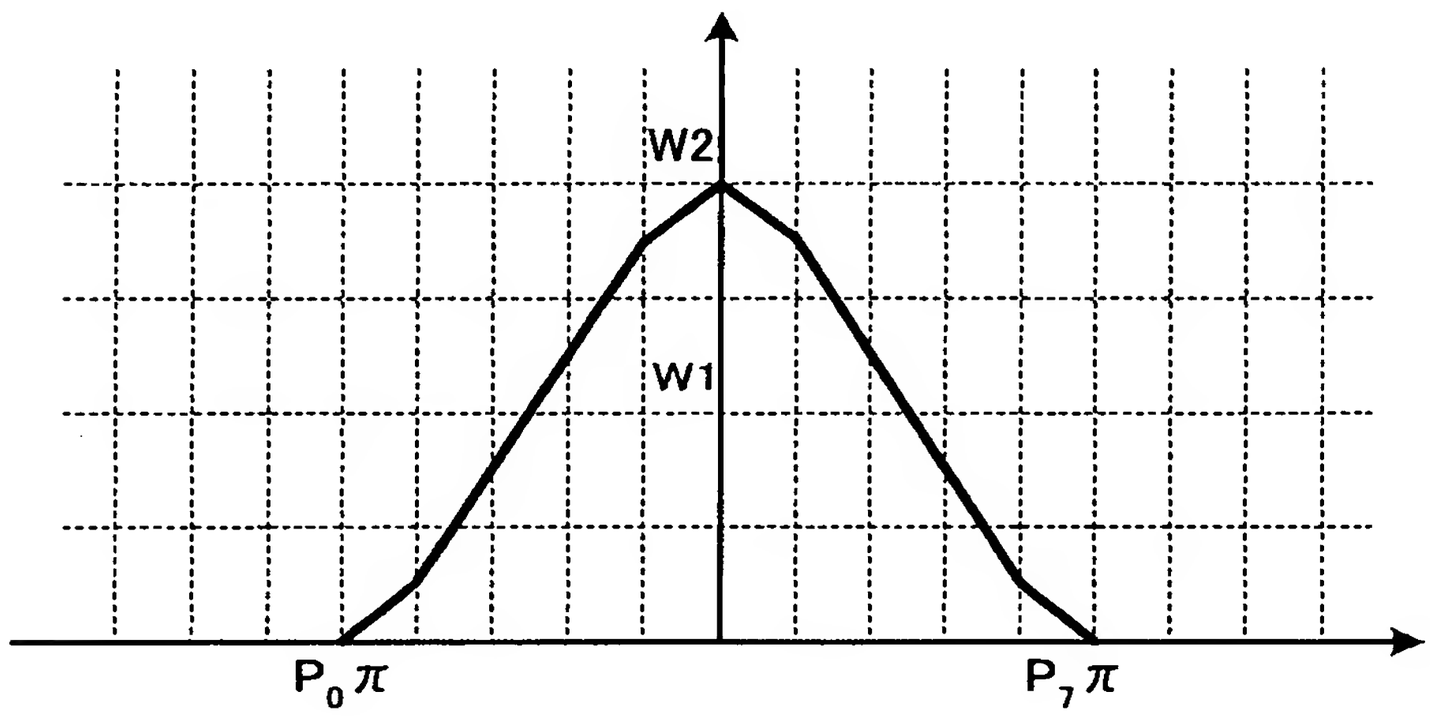
(a)

ε =0.8
F=0.9



(b)

ε =0.8
F=1.0



(c)

ε =0.8
F=1.1

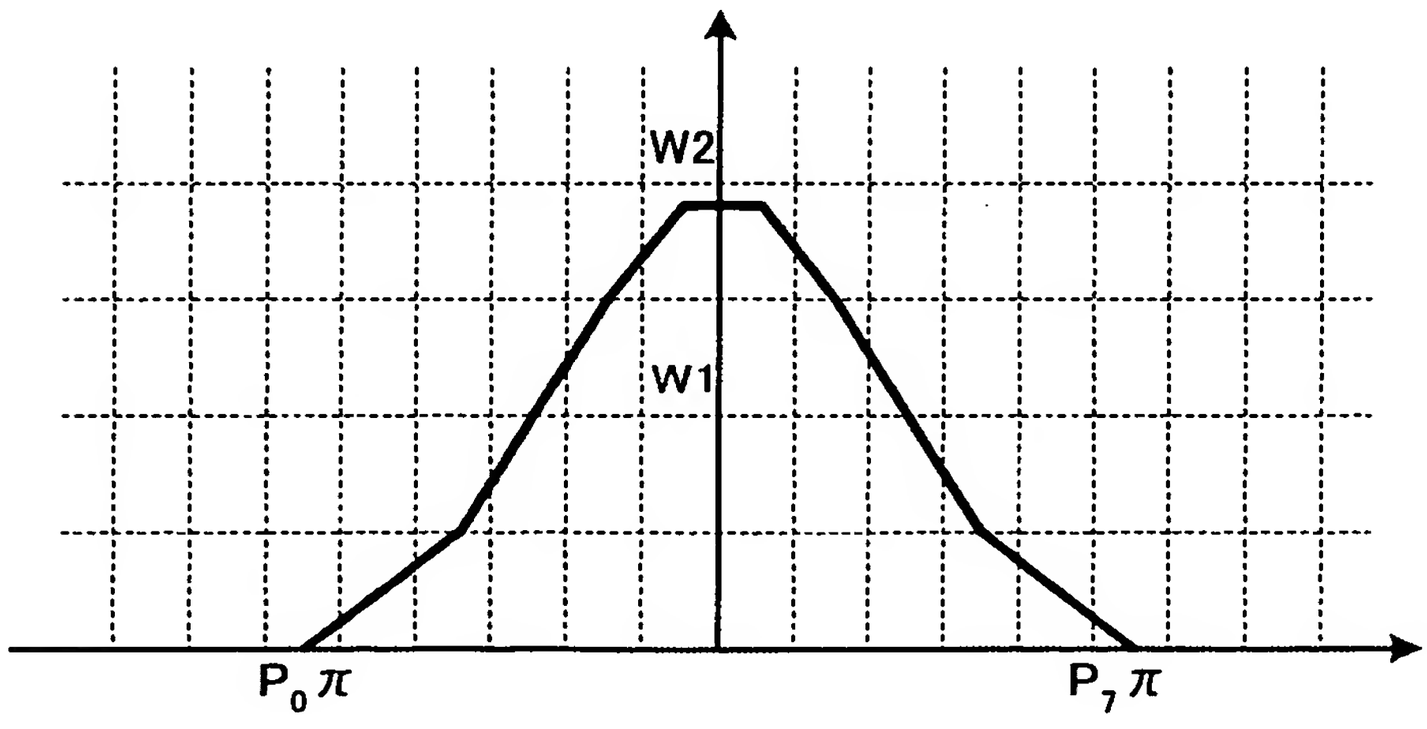


FIG. 9

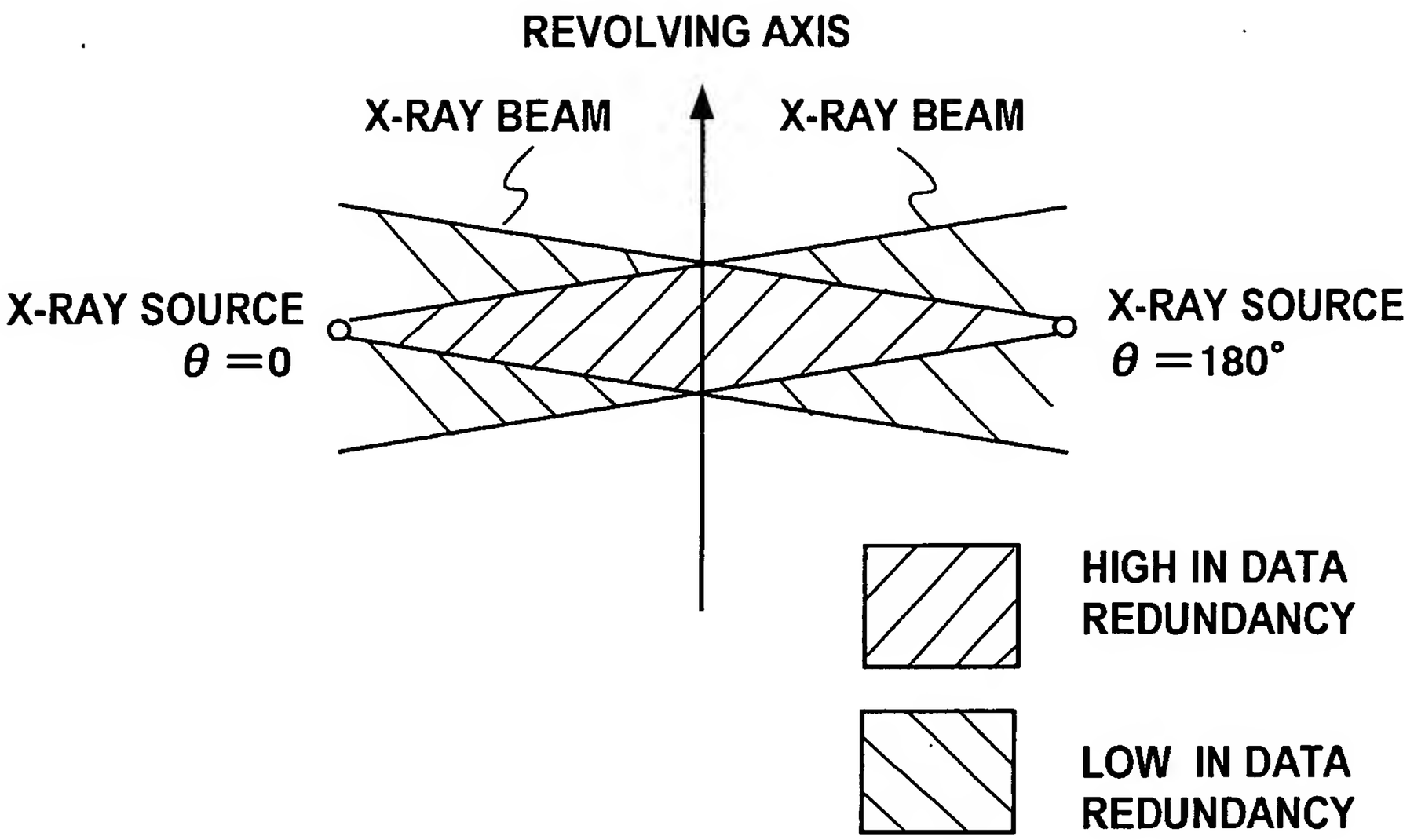

REVOLVING AXIS
X-RAY BEAM
X-RAY BEAM
X-RAY SOURCE
θ =0
X-RAY SOURCE
θ =180°
HIGH IN DATA
REDUNDANCY
LOW IN DATA
REDUNDANCY

FIG. 10

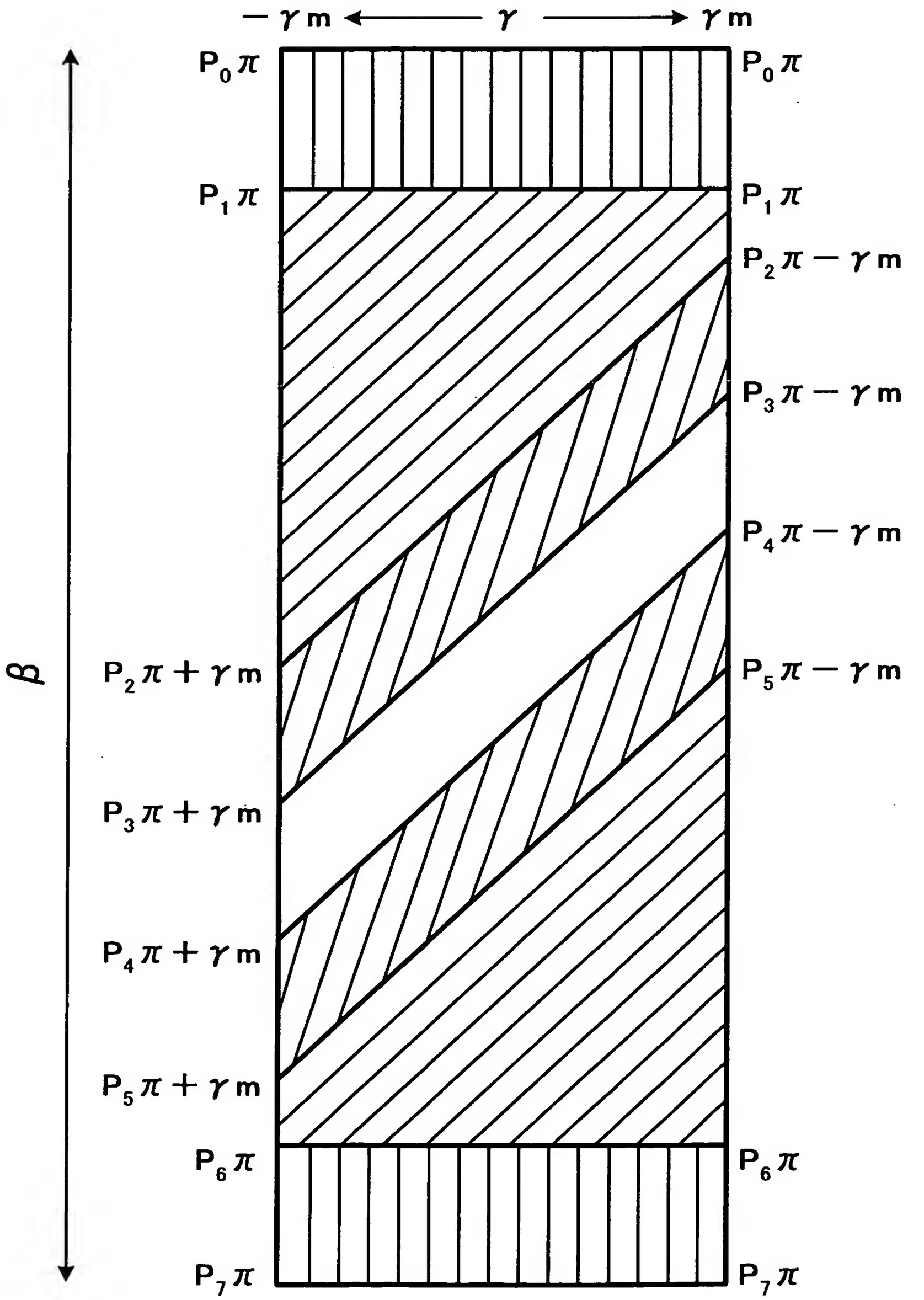
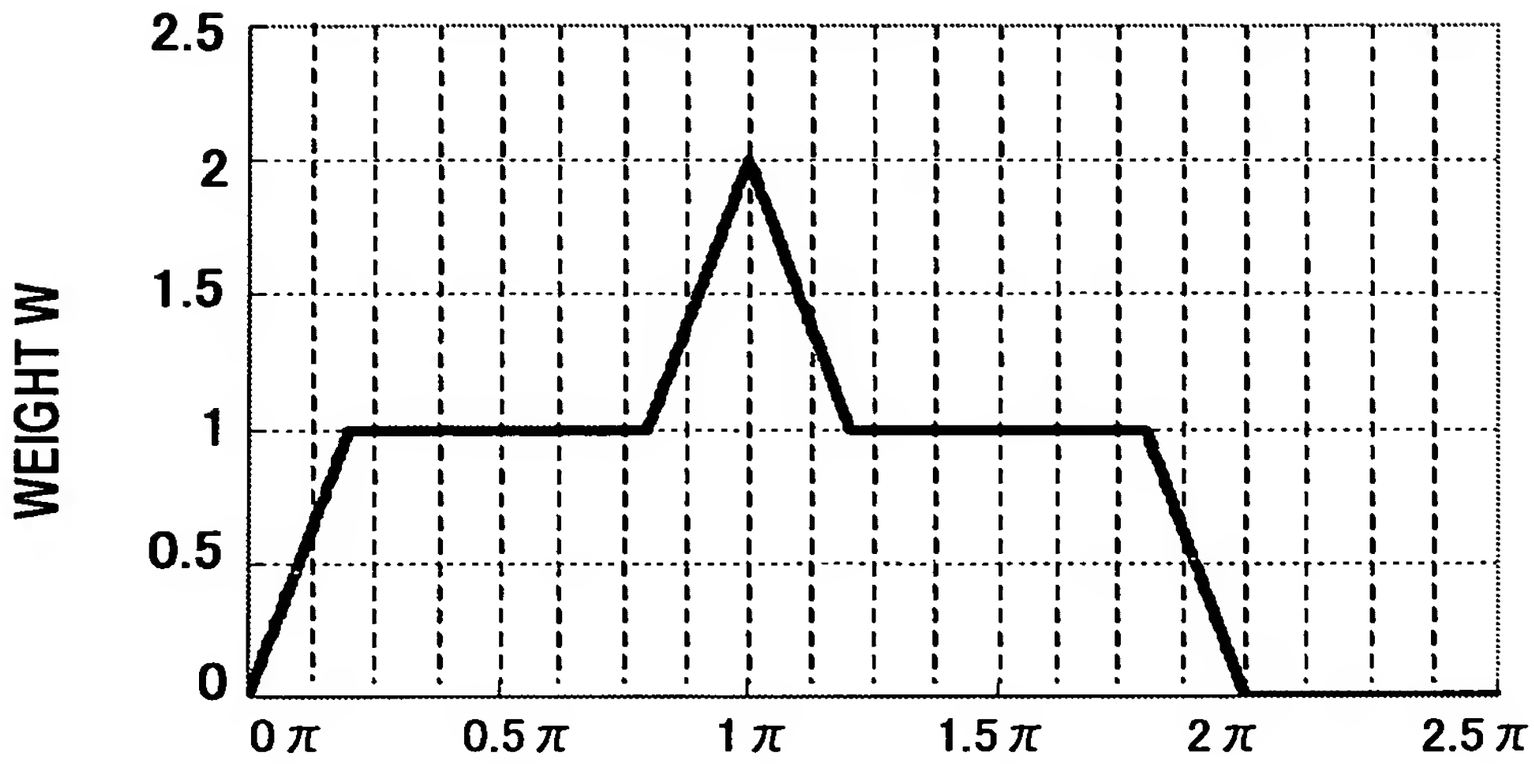

$-\gamma m \longleftarrow \gamma \longrightarrow \gamma m$
$P_0\pi$
$P_0\pi$
$P_1\pi$
$P_1\pi$
$P_2\pi - \gamma m$
$P_3\pi - \gamma m$
$P_4\pi - \gamma m$
$P_5\pi - \gamma m$
$P_6\pi$
$P_7\pi$
B
$P_2\pi + \gamma m$
$P_3\pi + \gamma m$
$P_4\pi + \gamma m$
$P_5\pi + \gamma m$
$P_6\pi$
$P_7\pi$

FIG. 11

(a)


2.5
2
1.5
1
0.5
0
WEIGHT W
0 π
0.5 π
1 π
1.5 π
2 π
2.5 π
VIEW PHASE θ

(b)

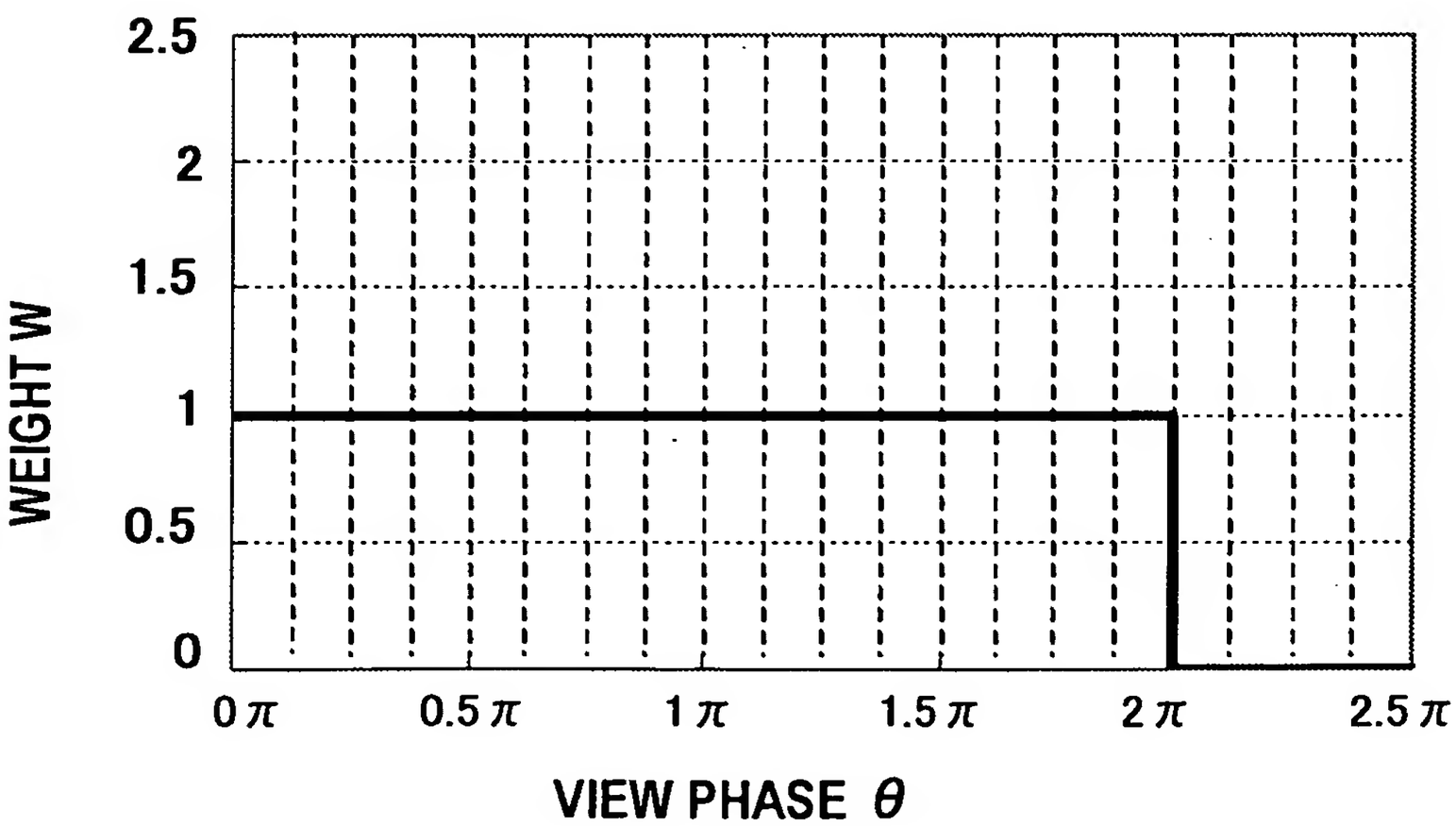
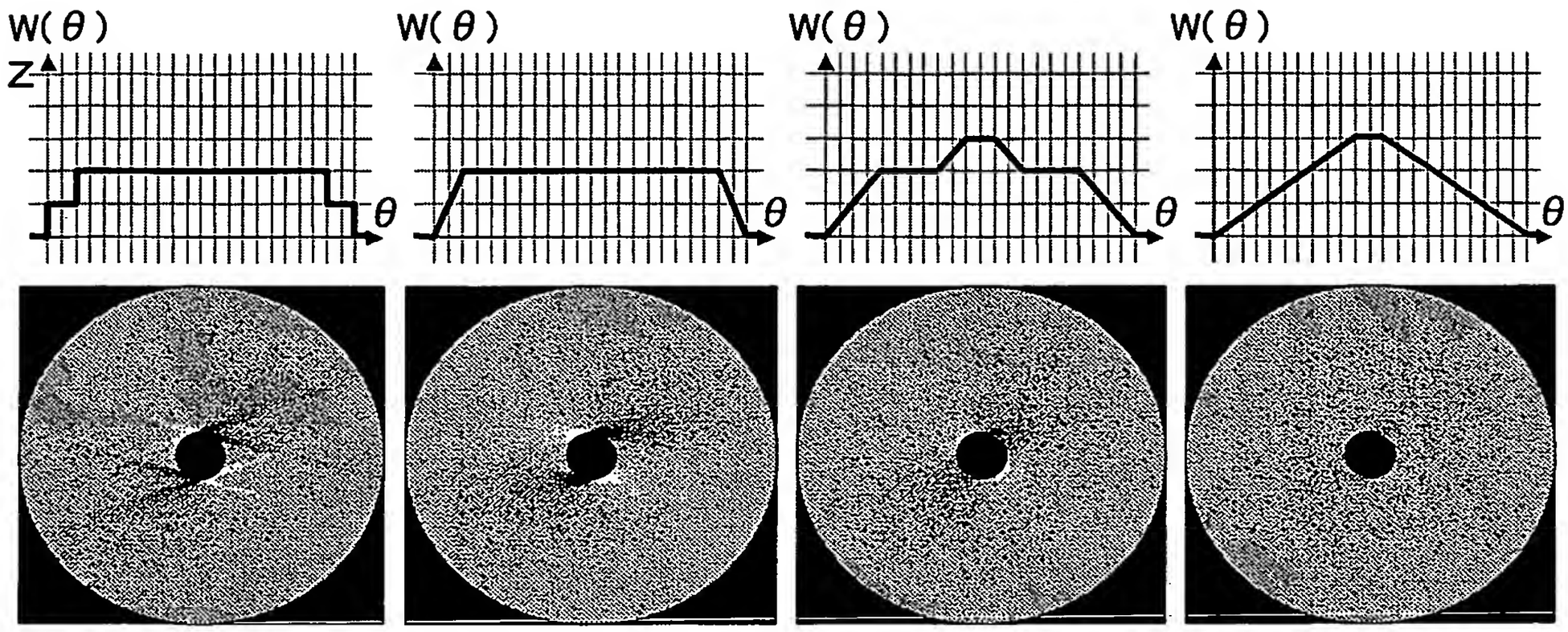

2.5
2
1.5
1
0.5
0
WEIGHT W
0 π
0.5 π
1 π
1.5 π
2 π
2.5 π
VIEW PHASE θ

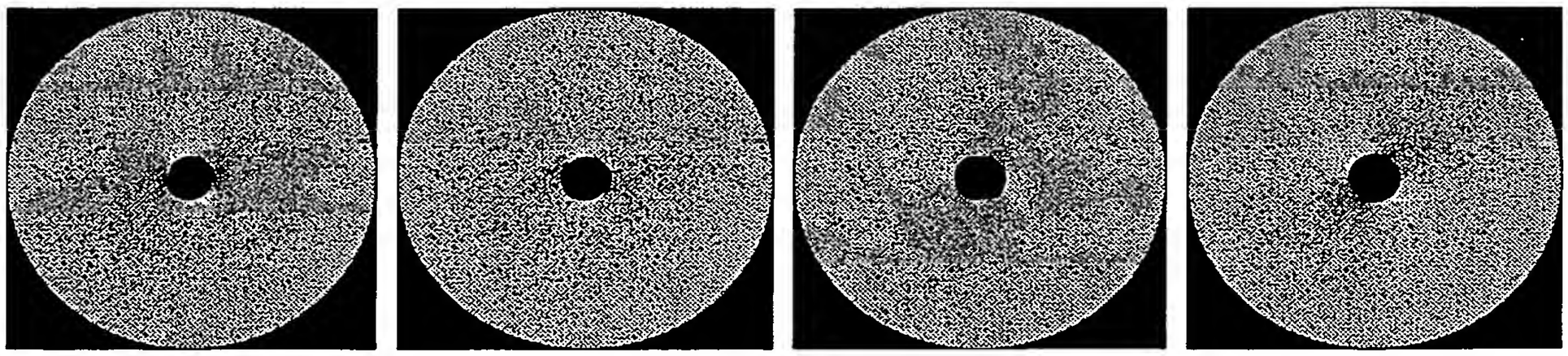
FIG. 12



(a) ε =0.0 (b) ε =0.2 (c) ε =0.4 (d) ε =0.6

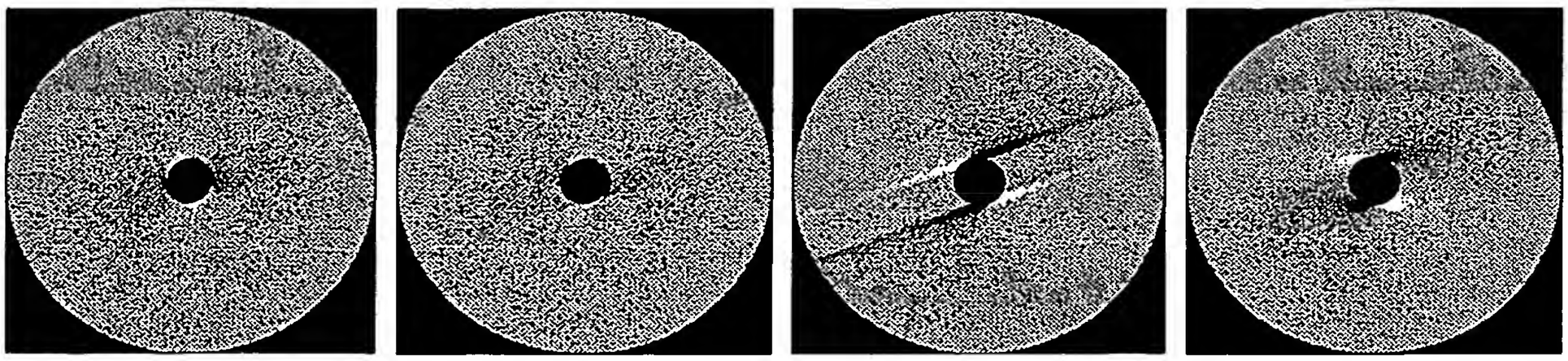
FIG. 13

(a)



F=0.8 F=0.9 F=1.0 F=1.1

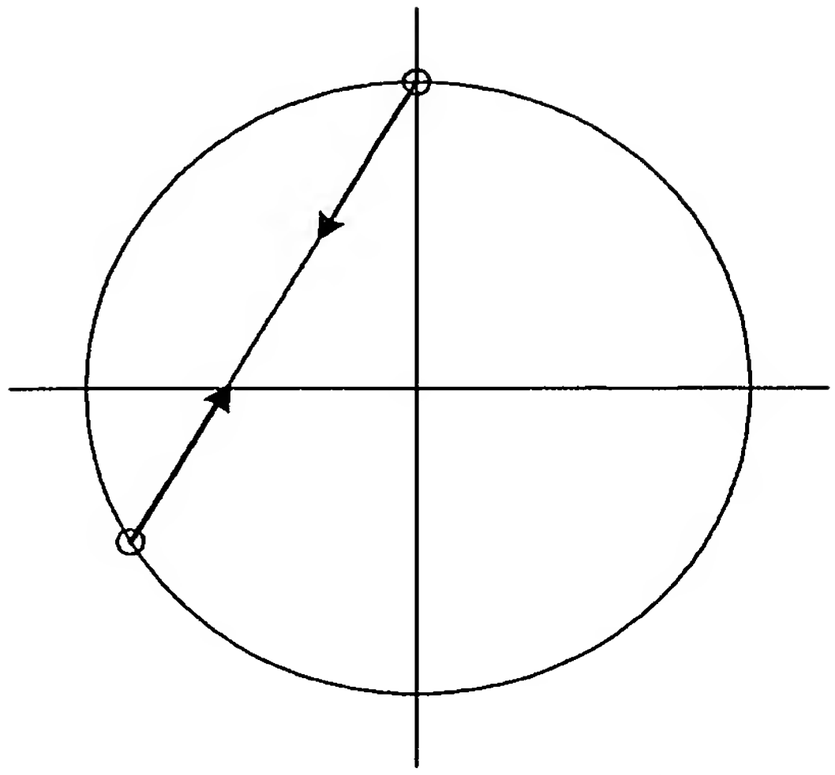
(b)



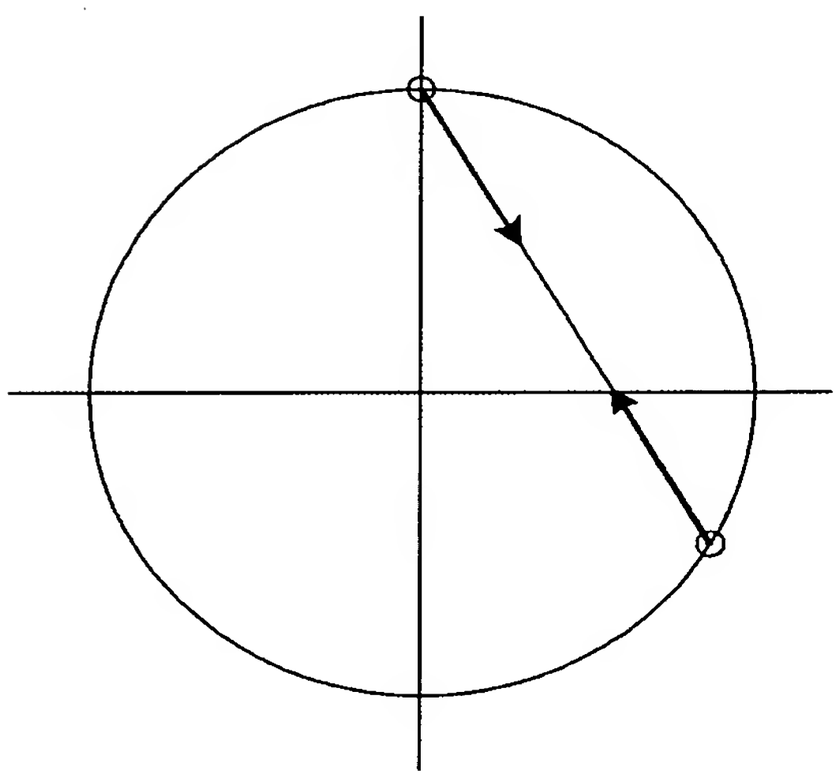
F=0.8 F=0.9 F=1.0 F=1.1

FIG. 14

(a)



(b)



(c)

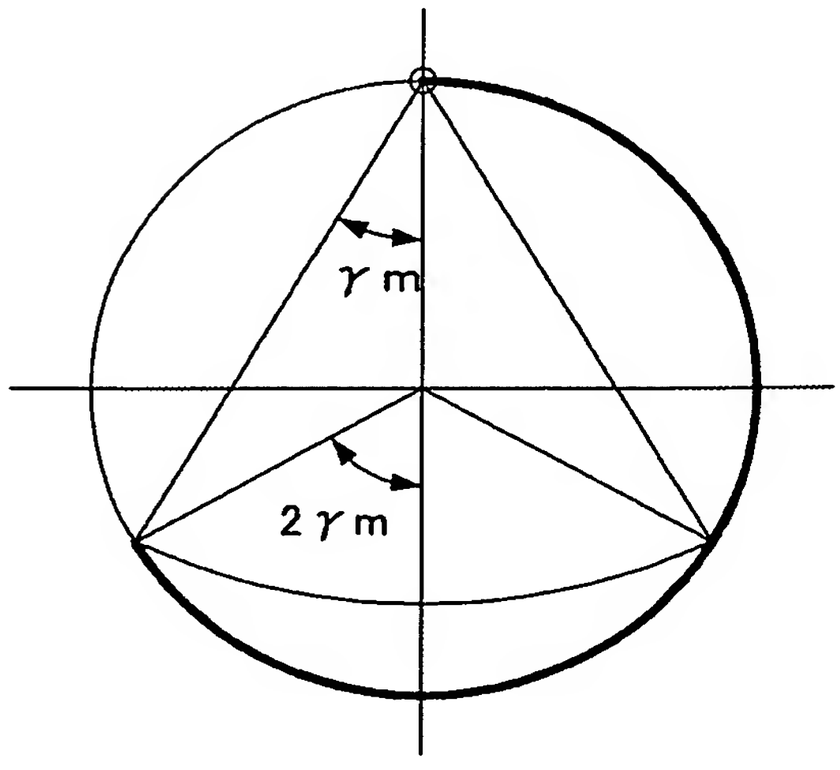


FIG. 15

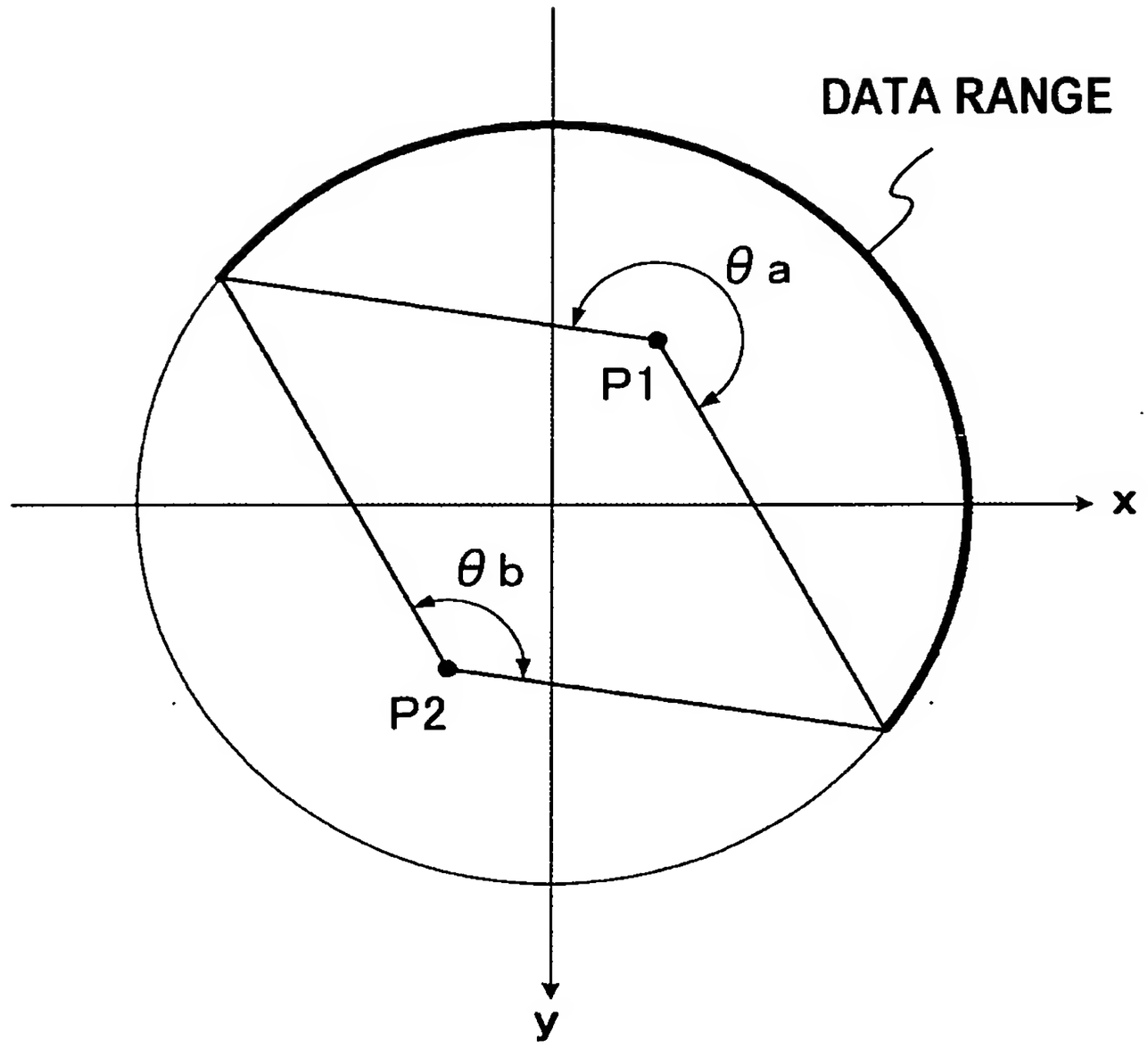


FIG. 16

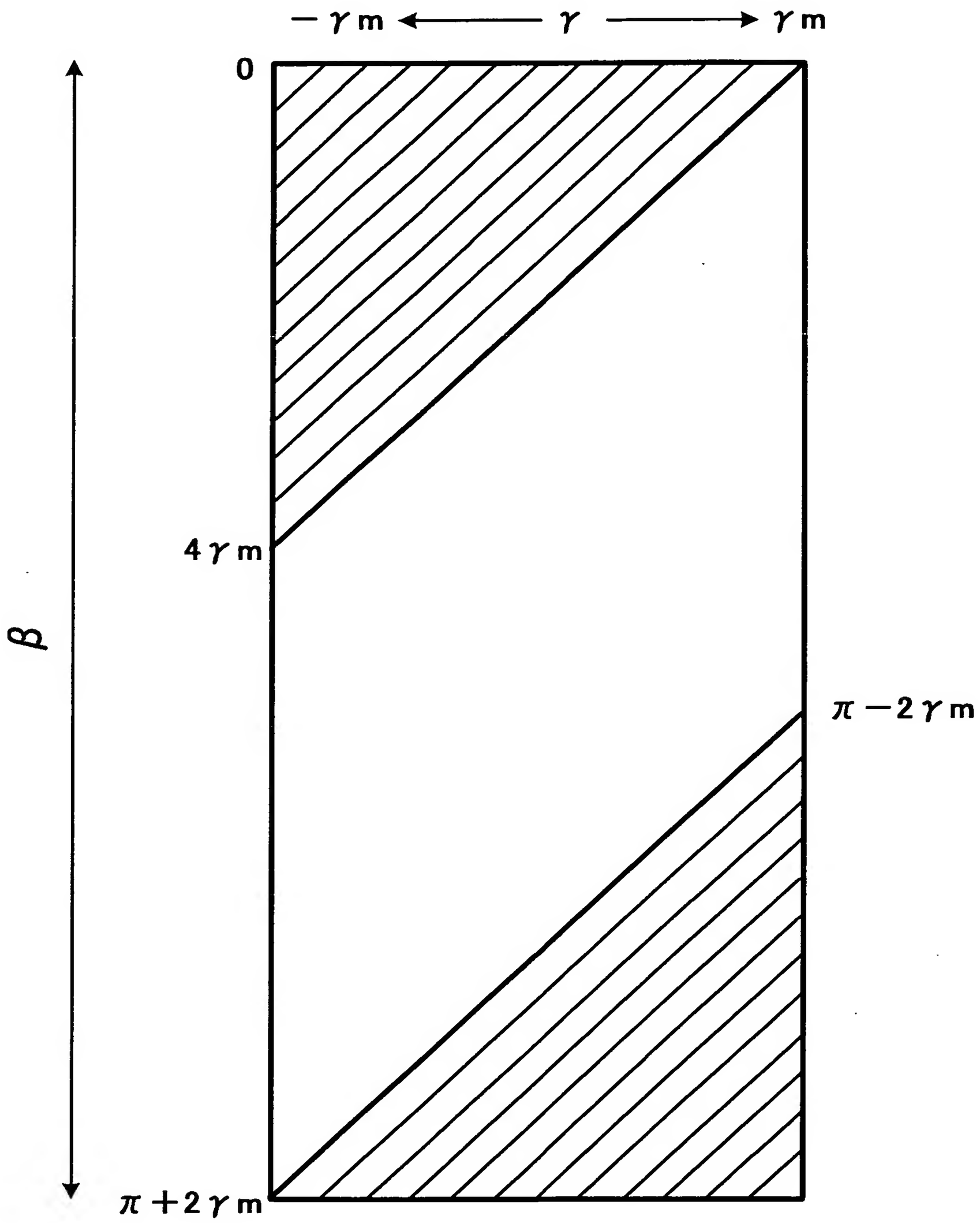


FIG. 17

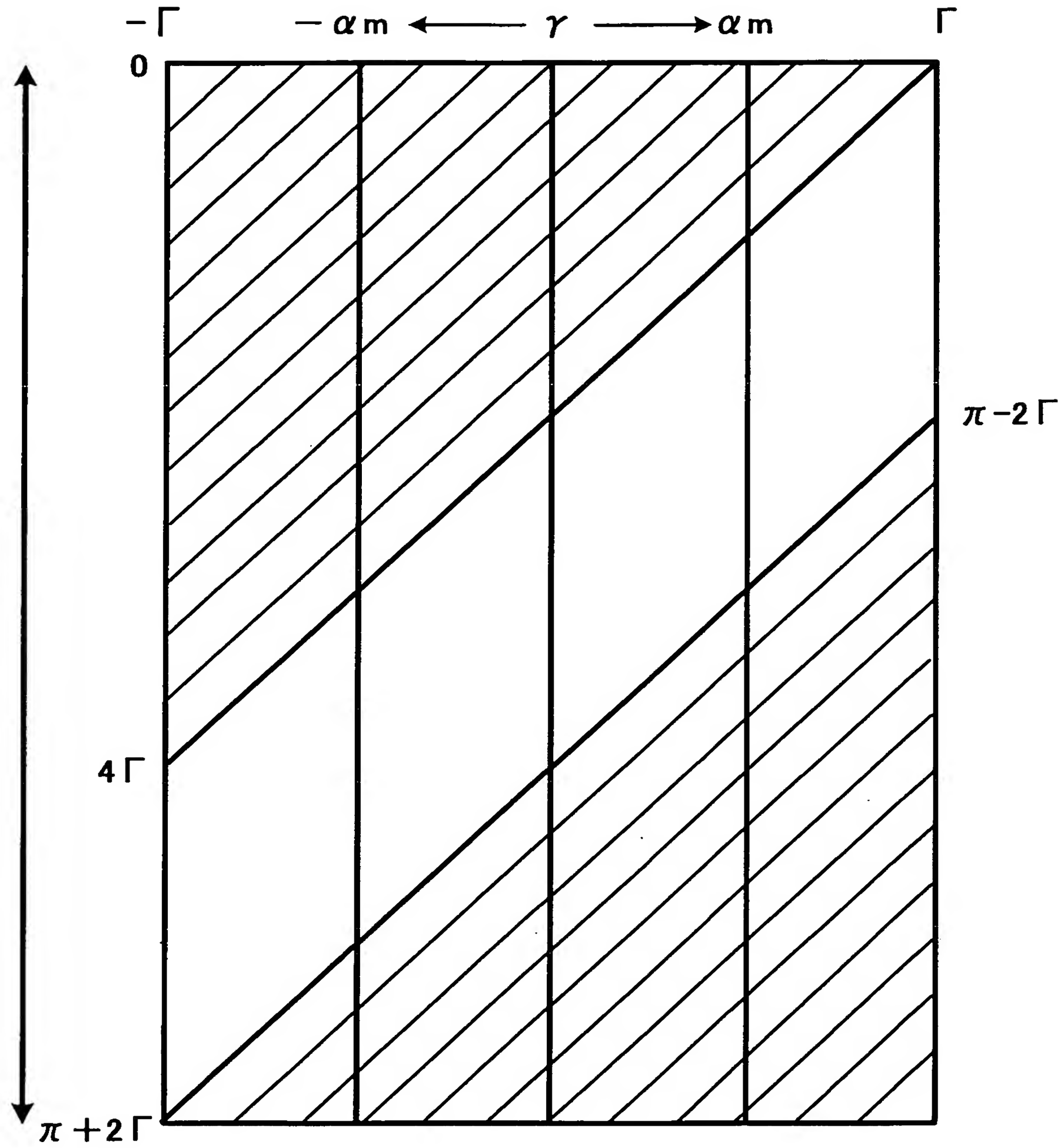


FIG. 18

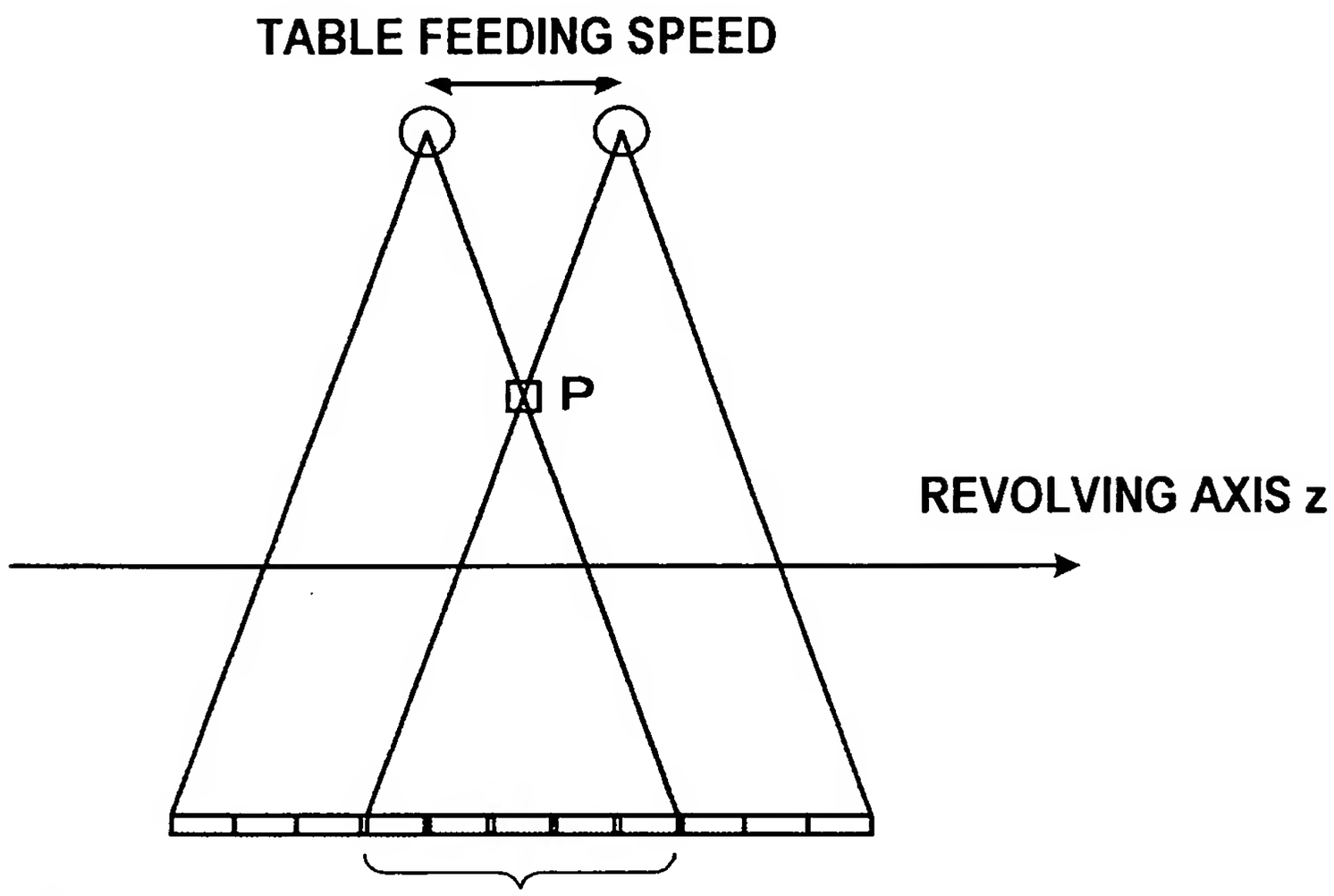


TABLE FEEDING SPEED
P
REVOLVING AXIS z
MEASURE TWICE WITH THE SAME PHASE

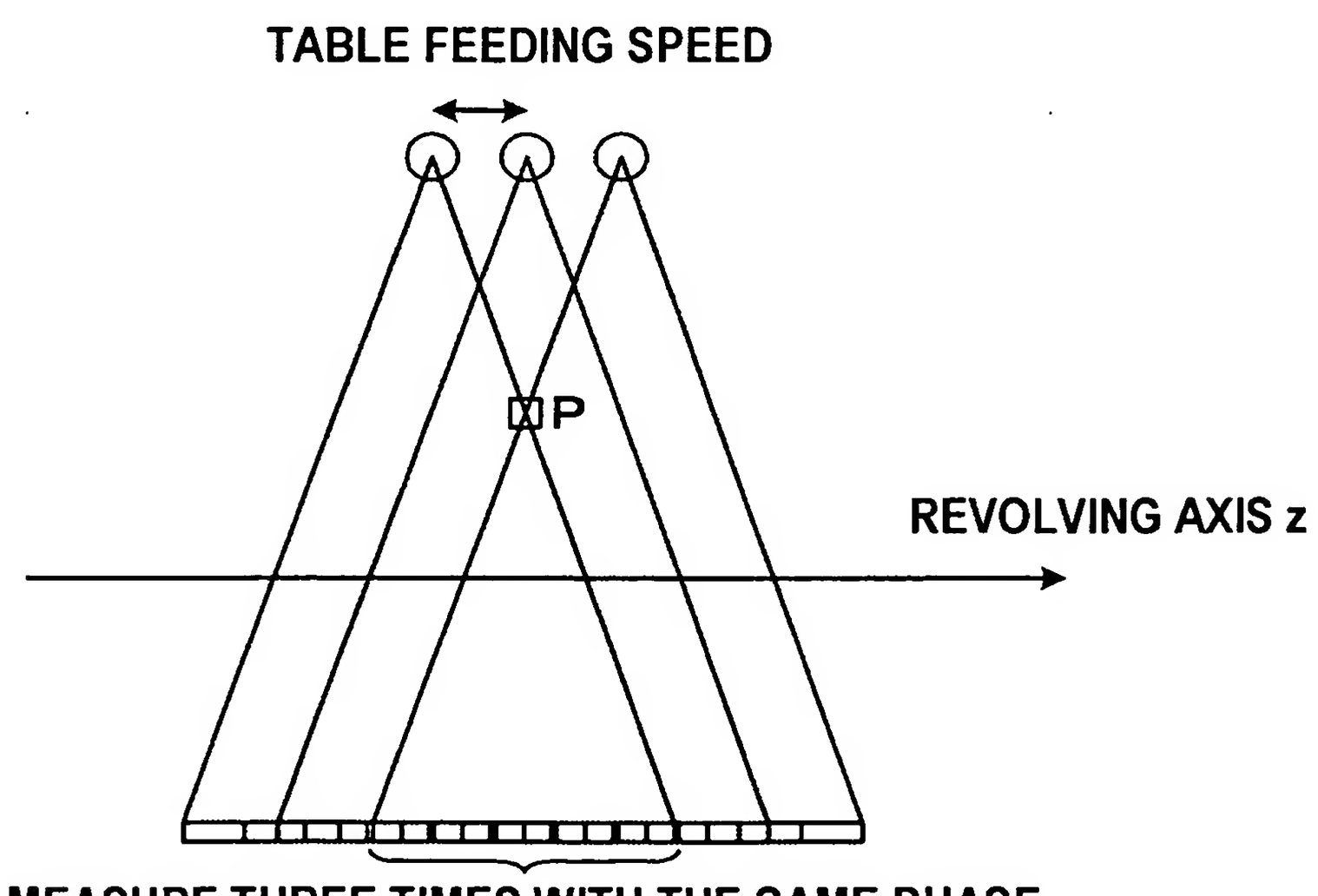
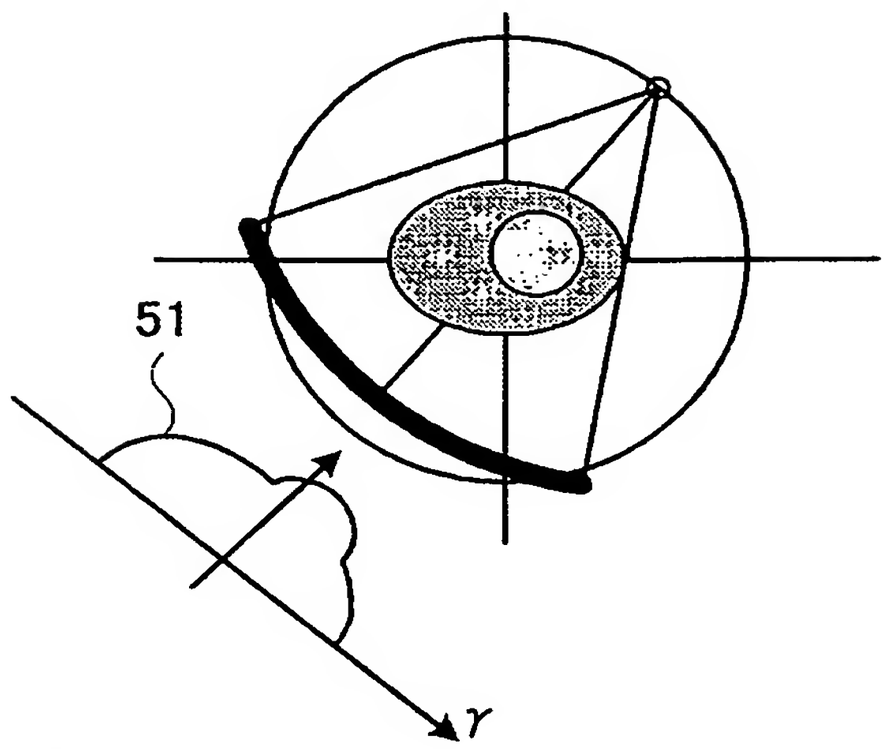


TABLE FEEDING SPEED
P
REVOLVING AXIS z
MEASURE THREE TIMES WITH THE SAME PHASE

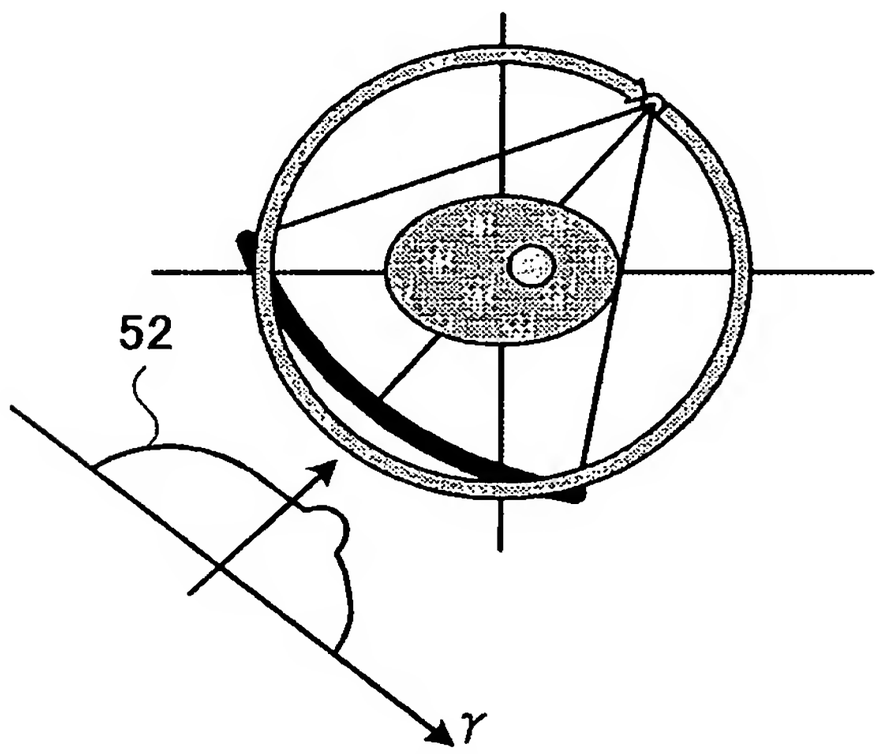
FIG. 19

(a)



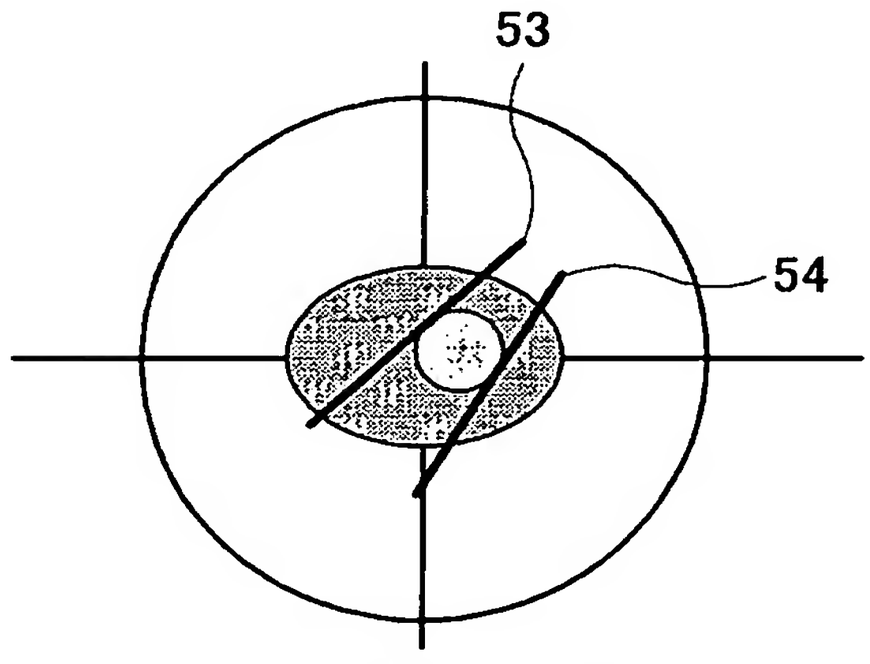
IMAGING START TIME (β =0)

(b)



IMAGING END TIME (β =2 π)

(c)



RECONSTRUCTED IMAGE